REMARKS

Favorable reconsideration of this application, in view of the present amendments and in light of the following discussion, is respectfully requested.

After entry of this amendment, Claims 1-21 are pending. However, Claims 12-20 have been withdrawn from consideration in a previous response. Claims 1-2, 8-9 and 11 are amended and Claim 21 is newly added. No new matter is introduced.

In the outstanding Office Action, Claims 8-10 were rejected under 35 U.S.C. § 112, second paragraph; and Claims 1-7 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Langlais (U.S. Patent No. 6,091,932, hereafter Langlais) in view of Erlich (U.S. Patent Application Publication No. 2005/0265220, hereafter Erlich).

Initially, Claims 8 and 9 are amended to correct the informalities identified in the outstanding Office Action. Claim 10 is also believed to be in conformance with the requirements of 35 U.S.C. § 112, second paragraph, by virtue of dependence from amended Claim 8. Accordingly, it is respectfully requested that the rejection of Claims 8-10 under 35 U.S.C. § 112, second paragraph, be withdrawn.

In reply to the rejection of Claims 1-7 and 11 as being unpatentable over Langlais in view of Erlich, Claim 1 is amended to recite, *inter alia*, a radio communication apparatus which uses a low-intermediate frequency to receive a multiband OFDM signal for hopping a center frequency at a specified band interval, which includes:

> AD conversion means for AD converting the low-intermediate frequency signal into a digital signal using a specified sampling frequency *to induce frequency folding in the digital signal*...(Emphasis added.)

Turning to the primary reference, Langlais describes a cable television data transmission system for two-way communication between an upstream unit and a plurality of

downstream units.[1] As part of the system, Langlais describes a digital OFDM modem having an OFDM receiver that converts a selected RF channel to an intermediate frequency which is then sampled and digitized by an analog-to-digital signal converter (51).[2] Langlais illustrates that the OFDM receiver includes an analog-to-digital converter (51), a mixer (56), a decimation filter (57) and a FFT receiver (52).[3] After conversion by the analog-to-digital converter (51), processing with mixer (56) and decimation with filter (57), the FFT receiver (52) converts the input sampled time series of an OFDM symbol into a group of independent sub-carrier magnitude and phase components which represent the QAM signals of each sub-carrier.[4] Langlais also describes that the signal from the selected channel may be down converted multiple times to multiple intermediate frequencies (IF) to produce the desired data output series for the selected channel.[5]

However, Langlais does not describe that the sampling frequency of the analog-to-digital converter (51) is selected to induce frequency folding in the input sampled time series of the OFDM symbol. Instead, Langlais describes that the head and modem uses only the middle 544 return band tones of the available 1,024 FFT tones in order to avoid aliasing fold-in, and that the received modem uses only the middle 32 tones of the available 128 FFT tones also to avoid aliasing fold-in.[6] Conversely, amended Claim 1 recites AD converting the low-intermediate frequency signal into a digital signal using a specified sampling frequency *to induce frequency folding in the digital signal*. Therefore, Langlais fails to describe the claimed AD conversion means.

Further, the outstanding Office Action combines Langlais with Erlich in its rejection of Claims 1-7 and 11. Erlich describes a preambled generator for use in an OFDM

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[1] Langlais at column 3, lines 34-40.
[2] Langlais at column 9, lines 35-37; see also Figure 5.
[3] See Figure 5 of Langlais.
[4] Langlais at column 9, lines 40-49.
[5] Langlais at column 16, lines 5-33.
[6] Langlais at column 16, lines 10-33.

transceiver that is switchable between a time frequency interleaving mode and a fixed interleaving mode.[7] Erlich also describes that the preamble generator multiplies a predetermined preamble of data packets by a pseudo random sequence to flatten the power spectrum of the preamble.[8] However, Erlich is completely silent regarding the use of aliasing and/or frequency foldin-in, and does not cure the above-noted deficiencies in Langlais. As such, no combination of Langlais and Erlich describes every feature recited in amended Claim 1, and amended Claim 1 is believed to be in condition for allowance together with any claim depending therefrom.

Moreover, amended Claim 11 recites features substantially similar to those recited in amended Claim 1 and is therefore believed to be in condition for allowance for substantially the same reasons. Accordingly, it is respectfully requested that the rejection of Claims 1-7 and 11 under 35 U.S.C. § 103(a) be withdrawn.

In addition, new Claim 21 is believed to be in condition for allowance for at least the reasons discussed above.

[7] Erlich at page 4, paragraph [0041].
[8] Id.

For the reasons discussed above, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance for Claims 1-11 and 21 is earnestly solicited.

Respectfully submitted,

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